

A close-up photograph of two blue caterpillars with white spots on green leaves. One caterpillar is on a leaf in the upper left, and the other is on a leaf in the center, curled into a 'J' shape. The leaves have some small holes and a small brown insect is visible on a lower leaf.

## **CHAPTER 14**

### **Pesticide Use**

## CHAPTER 14 PESTICIDE USE

Integrated Resource Management Considerations .....	14-2
<b>BMP: Invasive Species .....</b>	<b>14-2</b>
<b>PLANNING .....</b>	<b>14-3</b>
Considering All Your Options: Integrated Pest Management.....	14-3
Pesticide Characteristics Affecting Ground and Surface Water Contamination Potential .....	14-3
Selecting Pesticides.....	14-4
Selecting Application Methods.....	14-4
Spill Response .....	14-5
<b>BMP: Spill Response .....</b>	<b>14-5</b>
<b>OPERATIONAL CONSIDERATIONS .....</b>	<b>14-6</b>
Transportation of Pesticides .....	14-6
Storage of Pesticides .....	14-7
Emergency Planning and Community Right-To-Know .....	14-7
Mixing and Loading Operations .....	14-8
<b>BMP: Mixing and Loading Operations .....</b>	<b>14-8</b>
Pre-Application Activities .....	14-8
Timing and Weather Considerations .....	14-9
<b>BMP: Timing and Weather Conditions .....</b>	<b>14-9</b>
Applying Pesticides .....	14-9
<b>BMPs: Applying Pesticides .....</b>	<b>14-9</b>
Protecting Water Resources .....	14-10
<b>BMPs: Protecting Water Resources .....</b>	<b>14-10</b>
<b>POST-OPERATIONAL ACTIVITIES.....</b>	<b>14-11</b>
Equipment Clean-up and Container and Waste Disposal .....	14-11
<b>BMP: Equipment Clean-up.....</b>	<b>14-11</b>
<b>BMP: Container and Waste Disposal .....</b>	<b>14-11</b>
<b>FOREST CERTIFICATION .....</b>	<b>14-12</b>
<b>RESOURCES FOR ADDITIONAL INFORMATION .....</b>	<b>14-13</b>



(WDNR, Jeff Martin)

*Figure 14-1: A spray plane equipped with special wing-mounted hoppers for dispensing Phermone Flakes mixed with glue to control the spread of Gypsy Moths.*

Pesticides are chemical compounds that can assist in meeting forest management, utility, and right-of-way objectives by promoting the establishment, survival, growth, or maintenance of desired species or conditions.

Best Management Practices (BMPs) for water quality and other guidelines for use of pesticides are outlined in this chapter. Prominent pesticide related rules referenced include Chapters ATCP 29, 30 and 33, Wisconsin Administrative Code; Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); Federal Worker Protection Standards; and Chapters NR 107 and 140, Wisconsin Administrative Code. Users must also adhere to instructions and prohibitions printed on pesticide labels (see Appendix C for additional pesticide regulations). **The safety measures described here are important to follow regardless of whether they are designated as formal BMPs or laws – your health and protection of the environment depend on the responsible handling and application of pesticides!**

### Integrated Resource Management Considerations

- Planning is the essential first step in reducing pest problems. Maintaining water quality and protecting other resources is an important consideration in all aspects of pesticide operation planning.
- The effective treatment time for pesticides varies depending on the product and objectives. Some are most effective during the active growing season, which corresponds with the summer tourist/recreational-use season. Some can be applied during the dormant season.
- Broadcast application methods for herbicides may have a greater visual quality impact than band or spot treatment methods.

### BMP: Invasive Species

- 4.2 If pre- or post-activity control treatments are planned, ensure that they are applied within the appropriate time window.

## PLANNING

### Consider All Your Options: Integrated Pest Management

**Integrated Pest Management (IPM)** can be defined as an approach to pest management in which all available necessary techniques, including cultural, chemical, genetic and biological, are considered in a unified approach. IPM strategies have been developed to control forest pests without relying solely on chemical pesticides. Think about your objectives and develop a strategy to reach them. Determine what problems exist and what options you have to minimize them. Many insects, diseases and plants may not significantly impact the objectives of the management plan, so a careful evaluation of the potential impact of these organisms must always take place before deciding to apply a pesticide. Pesticide use should be considered as part of an overall program to control pest problems and not the sole solution. When planning to use a pesticide, the target organism can be an insect, disease-causing organism or undesired plant. For additional sources of information on IPM programs, see the Resource Directory.

### Pesticide Characteristics Affecting Ground and Surface Water Contamination Potential

The three main pesticide characteristics that can greatly affect a pesticide's potential to contaminate surface or groundwater are solubility, adsorption and half-life.

- **Solubility** is the ability of a pesticide to dissolve in water. The greater the solubility, the greater the chance that the pesticide will leach to groundwater or move in solution in surface water. Pesticides with very low water solubility's tend to remain at the soil surface and potentially move to surface water attached to sediment carried in runoff.
- **Adsorption** is the inherent ability of a pesticide to attach to soil particles. Some pesticides stick very tightly to soil, while others are easily dislodged. Adsorption increases as soil organic matter increases. An index or measure of soil adsorption is expressed by the **Koc Value**.

- The greater a pesticide's ability to adsorb to soil particles, the less the potential for that pesticide to move (except by soil erosion in surface runoff).
- Conversely, the lower a pesticide's ability to adsorb to soil particles, the greater the potential for that pesticide to leach into groundwater or move in solution in surface runoff.

- **Half-life** is the time it takes for a pesticide in soil to be degraded so that its concentration decreases by one-half. Each pesticide will have successive half-lives that will continually decrease concentrations by one-half.

The persistence of the pesticide in soil is the time it takes for the pesticide to degrade to the point where it is no longer active. Pesticides that do not break down quickly can be a hazard if they move into groundwater or surface water in toxic forms.

There are also soil and site characteristics that influence whether or not a pesticide will reach groundwater or surface water.

- Soils that are deep, high in organic matter, medium- to fine-textured (silty or clayey), and structurally sound are relatively good at "capturing" pesticides until they can be broken down by microbial activity. In general, the greater the depth to groundwater, the more the filtering action of the soil.
- Soils that are shallow (less than 20 inches), very coarse (sandy or gravelly) or drought-prone, are more likely to leach pesticides. Soils that are crusted or compacted are more likely to encourage pesticide runoff in surface water. A shallow depth to groundwater with highly permeable soils will also increase the chances of pesticide movement into groundwater. Surface water contamination can easily occur when pesticides are applied to sites adjacent to lakes, streams, wetlands, and natural drainage ways. If there is a quick conduit from the surface to the water table, such as a sinkhole, pesticides can be washed directly into the groundwater.



## Selecting Pesticides

When the decision is made to use pesticides, choose products suitable for use on the target species and registered for the intended uses.

- Only use pesticides registered by the U.S. Environmental Protection Agency and the Wisconsin Department of Agriculture, Trade and Consumer Protection. **Make sure the product is labeled for the intended purpose/application.** Restricted Use Pesticides (RUPs) can only be purchased and applied by someone who is certified and licensed by the Wisconsin Department of Agriculture, Trade and Consumer Protection.
- **Read and follow all label directions carefully prior to using any pesticide.** The pesticide label is the information printed on or attached to the pesticide container or wrapper. The label and supplemental labeling are legally binding documents; you must follow them explicitly.
- Maintain current labels and Material Safety Data Sheets (MSDS). The MSDS is a source of cautionary information and data.
- Evaluate other factors besides effectiveness and cost when selecting among pesticide options. Factors that influence potential impacts on water quality and other forest resources include site characteristics, pesticide characteristics (residual effects), application conditions, delivery systems, and application techniques.
- Select only pesticides labeled for aquatic use on sites where surface water is present at the time of application, or pesticides labeled for wetland use where water is near the surface. Make certain the product is labeled for the intended purpose/application.
- Select pesticides, application methods, equipment, and formulations that:
  - Avoid the potential for pesticide drift. **Drift** is the movement of pesticide in air currents or by diffusion onto property beyond the boundaries of the target area. Drift may occur as solid or liquid particles, or as vapors.
  - Avoid overspray or the application of pesticide beyond the boundaries of the target area.
  - Avoid pesticide residue movement to surface water and groundwater.

## Selecting Application Methods

Choosing the proper application method will help ensure the target organism is affected, and help prevent drift, non-uniform coverage, and exposure to non-target organisms. There are several application methods including but not limited to broadcast, directed spray, foliar, foliar and stem, basal, cut-stump, frill and hatchet injection, spot and soil application, injection, or incorporation. Your choice should be based on careful consideration of the nature and habits of the target organism, the site, pesticide chosen, available equipment, cost, and efficiency. As mentioned previously, drift, overspray, and surface and groundwater contamination must be avoided.

- Select the application method that is appropriate for the site and is needed to obtain your goal(s). For example, a targeted application that provides a low intensity, spot or band treatment may be preferable over a broadcast treatment.
- Use pesticide application equipment that minimizes soil disturbance.
- The visual impact of vegetation treatment can be minimized by favoring band or spot treatment over broadcast, and by leaving untreated or selectively treated areas adjacent to travel routes and recreation areas.
- If an endangered, threatened or special concern species is known to be present, select pesticides, application method, and equipment with consideration to protect those species.



(WDNR, Jeff Martin)

Figure 14-2: A handful of Phermone Flakes used for Gypsy Moth control instead of a chemical pesticide.

## Spill Response

A **spill** is the release of a compound into the environment, including air, water, soil, etc., in any manner other than its intended use. Forestry pesticides that are spilled can enter surface water or groundwater. Spills near or in geologically-sensitive areas have a high probability of a portion of the spill reaching groundwater.

Treat spills properly. Recommended steps include the following:

- Protect yourself. Be sure you wear the necessary personal protective clothing and equipment so that you do not expose yourself to the material. Refer to the product label for specific recommendations.
- Control the spill (stop the leak).
- Contain the spill (keep it from spreading). Contain the spilled material in as small an area as possible; construct a dam to prevent the chemical from spreading. It is particularly important not to allow any chemical to get into any body of water, including storm sewers.
- Guard the site.

- Notify the authorities (see contact information).
- Clean up the spill. Specific recommendations regarding clean-up procedures can be obtained from the chemical manufacturer. The chemical manufacturer lists an emergency number on the product label, which anyone can call for information regarding how to respond to an emergency situation that involves a specific product. Each product also has a Material Safety Data Sheet (MSDS) that outlines what to do in case of a spill.

**Contact the Wisconsin DNR whenever a spill occurs. Phones are answered 24 hours a day. Call 1-800-943-0003.** NR 706 provides specific guidelines for reporting spills to the Wisconsin DNR.

### BMP: Spill Response

- ◆ Maintain a spill containment and clean-up kit appropriate for the site as well as all materials on the operation, and report all spills. See additional BMPs for Spills in Chapter 11: General Operational Guidelines, page 11-6.

## OPERATIONAL CONSIDERATIONS

- **Conduct on-site meetings with the contractor, landowner and resource manager prior to moving equipment onto a site.** Such meetings can help assure a common understanding of landowner objectives, contract specifications, and site conditions.
- **Know the law.** The Wisconsin Department of Agriculture, Trade and Consumer Protection administers Chapter ATPC 29 and 30, Wisconsin Administrative Code, Pesticide Use, Control and Restrictions, which is the primary regulation concerning pesticide use in Wisconsin. ATPC 29 and 30 provide details regarding all aspects of pesticide use, and **must be followed**.
- **Read the label.** The pesticide label is the information printed on or attached to the pesticide container or wrapper. The label and supplemental labeling are legally binding documents; you must follow them explicitly.

Proper pesticide management practices make efficient use of chemicals while preventing or minimizing impacts on surface water, groundwater and other forest resources. Residues of pesticides used in forestry can affect these resources at any time – from transporting pesticides to container and waste disposal.



(WDNR, Jeff Martin)

*Figure 14-3: Exercise caution when mixing and loading pesticides into the spraying tank. Carefully measure the required amount in accordance with the pesticide label.*

### Transportation of Pesticides

The Federal Department of Transportation has designated many chemical compounds, including some pesticide active ingredients, as hazardous materials. Special training is required to transport hazardous materials. For questions on this topic, contact the Wisconsin State Patrol.

- The safest way to transport pesticides is secured in the back of a truck; never carry pesticides in the passenger compartment of any vehicle. Do not allow passengers or pets to ride in the back of the truck with the pesticide. Do not carry food, feed, seed, propagation material, or fertilizer with pesticides in the back of a vehicle.
- Inspect all containers prior to loading, and ensure that all caps, plugs and bungs (stoppers) are tightened.
- Wear the personal protective equipment and chemical-resistant gloves even when handling unopened pesticide containers.
- Select transportation routes to minimize the impact of a potential spill on water quality.
- Never leave pesticides unattended.
- Keep the emergency number for reporting spills handy; call **1-800-943-0003**.

## Storage of Pesticides

If you store pesticides, you must protect and secure the area to keep out unauthorized people and animals. Also, post signs that clearly indicate you store pesticides in the building. Read and follow the storage statements on the label.

- Locate pesticide storage facilities at sites that minimize the possibility of impacts on water quality in case accidents or fires occur. Locate the facility down wind and down hill from sensitive areas such as houses, play areas, and livestock facilities.
- Select unloading and operational storage locations where spills resulting from accidents or vandalism will not have impacts on water quality.
- Use storage buildings that have floors constructed of concrete or other impermeable materials, so that spills are easy to clean up. Storage buildings should contain drains or sills with sumps large enough to contain the contents of the largest container stored in the buildings. Insulate building to keep the temperature between 40°F and 100°F. Keep the area well-ventilated by installing an electrically-shielded, exhaust-type, ventilating fan. Put up “no smoking” signs, and let the fire department know the storage area’s location and contents.
- Avoid storing pesticides for extended periods of time. The shelflife of a pesticide is hard to predict. To prevent deterioration, mark each container with its date of purchase and use older products first; buy only what you need.
- Store only pesticides and pesticide equipment in storage facilities. Never store pesticides with food, feed, seed, plant propagation material, fertilizers, veterinary supplies, or personal protective equipment.

- ATCP 33, the Bulk Pesticide Storage Rule, must be followed if liquid containers larger than 55 gallons, or solid pesticides in undivided quantities greater than 100 pounds, are stored.

## Emergency Planning and Community Right-To-Know

- The federal Emergency Planning and Community Right-To-Know Act and the Wisconsin Superfund Amendments and Reauthorization Act (SARA) provide guidance for communities to prepare responses to accidental releases of chemicals listed as extremely hazardous substances. OSHA and SARA maintain lists of substances considered extremely hazardous. Some pesticides appear on these lists.
- The EPA also prepared a list of extremely hazardous substances and their threshold planning quantities (TPQs). If you use or store any listed substance in a quantity at or greater than its TPQ at any one time, you must contact the State Emergency Response Board and your local emergency planning committee. The local committee should assist you in preparing a facility site plan. Employers who are subject to OSHA’s right-to-know law are also subject to community right-to-know reporting requirements.
- For a complete list of extremely hazardous substances or for more information regarding the Emergency Planning and Community Right-To-Know Act, contact the State Emergency Response Board at **608-242-3232**.



## Mixing and Loading Operations

The hazard involved in mixing and loading pesticides requires you work with at least one other person. Wear personal protective equipment listed on the product label. If there are no specific instructions, wear at least a chemical-resistant apron and gloves, protective eyewear, long-sleeved shirt and pants.

### BMP: Mixing and Loading Operations

- ◆ Mix and load pesticides outside of riparian management zones and, where practical, in upland areas.

- Review the label before opening the container to ensure familiarity with current use directions.
- Exercise care and caution during mixing and loading of pesticides.
- Do not fill/clean pesticide equipment where pesticide might enter a well or surface water, or where rising water could flood the filling/cleaning site.
- **It is illegal to fill pesticide equipment directly from waters of the state other than from public water supplies or private wells fully protected against back-siphonage either by an air gap or other equivalent protection device. Protect your water supply from contamination by using an air gap or an antisiphoning device.**
- Comply with spill containment surface requirements if you mix, load or transfer more than 1,500 pounds of active ingredient at one site in a calendar year, or if you do so within 100 feet of a well or surface water.
- Do not mix or load pesticides within eight feet of a well or surface water under any circumstances.
- Fill a tank from surface water if the tank is used for water only; **no pesticide container should come within eight feet of any surface water.**
- Replace the pour caps, and close bags or other containers immediately after use.
- Transport and store hoses used to fill pesticide application equipment in a manner that prevents direct contact with pesticides, gasoline or oils, or surfaces on which these substances have been spilled.
- Do not leave a spray or mix tank unattended while it is being filled.
- Triple-rinse all empty plastic and metal pesticide containers, and add the rinse water to the spray solution. You can use the rinsate in a future mix provided the pesticide in the rinsate is labeled for the site, and the final mix does not exceed label rates.



(WDNR, Jeff Martin)

*Figure 14-4: Triple-rinse all containers and measuring cups, and add rinse water to the spray solution.*

## Pre-Application Activities

Ensure that pesticide applicators are properly licensed in the appropriate category by the Wisconsin Department of Agriculture, Trade and Consumer Protection when a license is required – see the Resource Directory for more information.

- Refer to and follow label directions before applying a pesticide.
- Mark the boundaries of the area for treatment.
- Protect vegetation that is part of a cultural resource (such as historic homestead sites) if it will be impacted by herbicide applications.

## Timing and Weather Considerations

### BMP: Timing and Weather Conditions

- ◆ Apply chemicals only under favorable weather conditions.



(WDNR, Jeff Martin)

*Figure 14-5: Apply chemicals with the right equipment during calm weather to avoid unwanted drift. Band or spot applications, seen above in a walnut plantation, are preferred to broadcast spraying.*

- Avoid applying pesticides when the likelihood of significant drift exists. Use a drift control agent when appropriate.
- Consider applying pesticides near dawn or dusk, when wind speeds are generally lowest.
- Follow the directions on the label that tells you not to spray when the wind speed is above a certain threshold.
- Limit broadcast applications (both aerial and ground) to appropriate temperature and relative humidity conditions. High temperatures enhance loss of volatile pesticides and the rate of evaporation of droplets. Relative humidity also influences the rate of evaporation, with the rate increasing with decreases in humidity. Apply chemicals only under favorable weather conditions. Consider the likelihood of rain prior to application to ensure the application is successful.

## Applying Pesticides

### BMPs: Applying Pesticides

- ◆ Check all equipment for leaking hoses, connections and nozzles to prevent chemical leaks from equipment.
- ◆ Calibrate spray equipment to apply chemicals uniformly and in the correct quantities.
- ◆ Follow all EPA label instructions on containers.
- ◆ When conducting aerial applications:
  - Hire a licensed aerial applicator.
  - Identify and avoid riparian management zones and surface water to prevent chemicals not labeled for aquatic use from drifting over open water or from accidentally being applied directly on the water.
- Read and follow all label directions carefully prior to using any pesticide. The pesticide label is the information printed on or attached to the pesticide container or wrapper. The label and supplemental labeling are legally binding documents; you must follow them explicitly.
- Employ the lowest reasonable equipment pressure when applying pesticides.
- Select a nozzle type that produces the largest drops at a given rate and pressure appropriate to the chemical being applied.
- Avoid applying pesticides on ephemeral ponds unless that application is part of the management objective. If unable to avoid pesticide use in these areas, select only pesticides labeled for aquatic use when water is present at the time of application. Select pesticides labeled for wetland use when the water table is near the surface.

- Avoid broadcast application methods within riparian management zones (RMZs). Appropriate treatments within RMZs include:
  - Use of pesticides labeled for aquatic use
  - Manual or mechanical treatments
  - No treatment
  - Spot, banded, stump, basal bark, hack and squirt, frill, or injection treatments
  - Use of less soil-mobile pesticides
  - Increasing filter strip width when using toxic to highly-toxic insecticides
- **Applicator Certification/licensing Requirements:** Pesticide Applicator Training (PAT), provided by the University of Wisconsin Extension, provides the training and certification to people who want to mix, load, supply, or direct the use of restricted-use pesticides. Only a certified applicator may work with restricted-use pesticides. PAT is also recommended for any person working with pesticides. Participation in this program, certification and licensing may be required for person's involved with pesticides, depending on the activities planned. Contact the Wisconsin Department of Agriculture, Trade and Consumer Protection (see the Resource Directory) to determine whether or not you need to be certified or licensed.
- **Other Training Requirements:** Employees covered by the Worker Protection Standards (other than members of an agricultural owner's immediate family) must be trained on general pesticide safety principles every five years. This training may be obtained through PAT or training programs in compliance with the EPA.
- Avoid applying pesticides directly to water except where the pesticide is specifically labeled for application to water. When the pesticide does not have a full aquatic label, avoid riparian management zones, filter strips or shade strips and other reserve areas adjacent to all streams, lakes, wetlands, and ditches that contain water at the time of application. Always refer to the label to determine legal use and application.
- Prohibit aircraft transporting pesticides from crossing open water where practical. Aircraft also should not fly down the course of any recognizable stream. Where stream crossings cannot be avoided, they should be made at right angles to the stream course. Chemical application should be shut off during turns and over water.
- Select potential heliport or helipad locations with consideration for two conditions that could affect water quality: 1) flight patterns in relation to waterbodies; and 2) locations adjacent to waterbodies.

### BMPs: Protecting Water Resources

- ◆ Use chemicals in riparian management zones with guidance from a trained natural resource professional.
- ◆ Use spot-injection or stump treatment methods when applying chemicals not labeled for aquatic use in riparian management zones.
- ◆ Avoid applying herbicides in areas where the chemicals can kill stabilizing vegetation on slopes, gullies and other fragile areas subject to erosion that drain into surface water.

### Protecting Water Resources

Pesticides spilled or applied to the surface of the land can be carried or leached down to groundwater by water moving through the soil. Pesticides can also reach surface water in runoff or in contaminated groundwater that is discharging to surface water. **ATCP 29 and 30** outline the WDATCP's regulatory program for the prevention and control of ground and surface water contamination. **Chapter NR 140** also contains rules that the Wisconsin DNR has written to govern groundwater protection.

## POST-OPERATIONAL CONSIDERATIONS

### Equipment Clean-up and Container and Waste Disposal

#### BMP: Equipment Clean-up

- ◆ Rinse spray equipment and discharge rinse water only in areas that are part of the application site.

#### BMP: Container and Waste Disposal

- ◆ Dispose of chemical containers according to label instructions.



(WDNR, Jeff Martin)

*Figure 14-6: Use only properly maintained spraying equipment that has been checked for leaks. Make sure the nozzle type produces the largest drops at a given rate and pressure appropriate to the chemical being applied.*

The federal government regulates the disposal of pesticide waste under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Resource Conservation and Recovery Act (RCRA). In Wisconsin, the Wisconsin DNR further regulates such disposal under Administrative Codes NR 500 series and NR 600 series.

- Clean equipment on a concrete pad with a collection basin and tanks to hold rinsewater. Use the rinsewater for preparing future mixes for a labeled site. Never clean in areas where pesticide residues will enter streams, lakes, wetlands, or groundwater.
- Rinse mixing apparatus at least three times. Apply rinsate in spray form to the area to be treated, being sure not to exceed label recommendations.
- Rinse all empty plastic and metal pesticide containers three times, and add the rinsewater to the spray solution. To properly triple-rinse containers:
  - Empty the pesticide into the spray tank and allow the pesticide container to drain.
  - Fill the container 10 to 20 percent full with water (or solvent, in some cases), rinse, and pour the rinse water into the spray tank.
  - Repeat the previous step two more times, and apply rinsate to the spray site.
  - Apply all leftover solutions and rinsates to the treatment area, being sure not to exceed label recommendations.
- Puncture and flatten containers not intended for return to the manufacturer.
- Refer to the product label for additional information on proper disposal.
- **It is illegal to bury or burn any pesticide containers in Wisconsin.**
- Dispose of triple-rinsed containers in one of four ways:
  - Return them to the dealer for reuse or refilling.
  - Recycle them through the Wisconsin Fertilizer and Chemical Association Plastic Pesticide Container Recycling Program.
  - Bring them to a county Pesticide Clean Sweep program.
  - Dispose of them at an approved landfill.



## FOREST CERTIFICATION

When working on forest land that is enrolled in a forest certification system it is important to understand which standards apply and how to implement them. All forest certification systems require compliance with state and federal regulations that govern the use of pesticides. Additionally, some forest certification systems may not allow the use of certain pesticides, regardless of the label recommendations. Note that pesticide certification, which is governed by the Wisconsin Department of Trade Agriculture and Consumer Protection (DATCP), acknowledges that

a certified pesticide applicator has received the relevant training to apply pesticides. This pesticide applicator certification is entirely different from a forest certification system that provides standards that the land manager must comply with to maintain forest certification. A certified pesticide applicator is licensed by DATCP to use any pesticide determined to be appropriate for the site and that is labeled for the pest targeted for control. However, this does not mean that the pesticide being applied is acceptable under the standards of the forest certification system.



(WDNR, Aaron Buchholz)

*Figure 14-7: Band spraying reduces the amount of herbicides used for site preparation and maintains ground cover in between the rows.*

## RESOURCES FOR ADDITIONAL INFORMATION

*These resources are specific to the information in this chapter only. Refer to the Resource Directory for additional resources related to this chapter.*

## INFORMATION ON PESTICIDE LABELS

**[www.cdms.net/LabelsMsds/LMDefault.aspx](http://www.cdms.net/LabelsMsds/LMDefault.aspx)**

## WDATCP PESTICIDE DATA BASE SEARCH SITE

**[www.kellysolutions.com/wi/](http://www.kellysolutions.com/wi/)**

## TO REPORT PESTICIDE SPILLS

**Contact the Wisconsin DNR at 1-800-943-0003.**

## NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.